Section I. (Amendments to the Claims)

Please amend the claims, as set out in the listing of claims 1-18 below.

1. (Currently amended) A gel electrophoresis sample composition ~~for preventing~~ that is resistant to protein degradation, comprising protein that is susceptible to degradation by protease, with protease being present in the sample composition, and with the sample composition containing small heat shock protein (sHSP) in an amount in a range of from 0.1 to 50 parts, relative to 100 parts by weight of total protein in said sample composition, ~~an effective amount of small heat shock protein (sHSP),~~ wherein said sHSP includes at least one of the forty ~~sHSP~~ HSPs selected from the group consisting of:

IbpA (inclusion body-associated protein A) derived from *Agrobacterium tumefaciens*;

sHSPs derived from *Arabidopsis thaliana*;

HspB (heat shock protein B), HspH (heat shock protein H), HspC (heat shock protein C) and HspF (heat shock protein F) derived from *Bradyrbizobium japonicum*;

IbpA derived from *Brucella suis*;

sHPs derived from *Buchnera aphidicola*;

IbpA derived from *Buchnera aphidicola* str. APS (*Acyrthosiphon pisum*);

sHSPs derived from *Citrus tristeza* virus;

IbpA and IbpB (inclusion body-associated protein B) derived from *Escherichia coli*;

IbpB derived from *Helicobacter pylori*;

Hsp27 and α,β-crystallin derived from Human;

Hsp16.5 derived from *Methanococcus jannaschii*;

IbpA derived from *Methanopyrus kandleri*;

Hsp25 derived from Murine;

sHSPs derived from *Mycobacterium leprae*;

Hsp16.3 derived from *Mycobacterium tuberculosis*;

IbpB derived from *Pirellula sp.*;

Hsp18.1 derived from *Pisum sativum*(pea);

sHSPs derived from *Plasmodium falciparum*;

IbpA derived from *Pseudomonas aeruginosa*;

IbpA derived from *Pseudomonas putida*;

Hsp26 derived from *Saccharomyces cerevisiae*;

IbpA and IbpB derived from *Salmonella enterica*;

IbpA and IbpB derived from *Salmonella typhimurium*;
IbpA derived from *Shewanella oneidensis*;
IbpA and IbpB derived from *Shigella flexneri*;
IbpA derived from *Sinorhizobium meliloti*;
IbpA derived from *Streptococcus pyogenes*;
sHSPs derived from *Streptomyces coelicolor*;
sHSPs derived from *Sulfolobus solfataricus*;
Hsp16 derived from *Synechococcus vulcanus*;
IbpA derived from *Thermoanaerobacter tengcongensis*;
IbpA derived from *Thermoplasma acidophilum*; and
sHSPs IbpA and IbpB derived from *Yersinia pestis*.

2. (Canceled)

3. (Currently amended) The composition according to claim 1, further comprising an electrophoresis gel, and wherein said sHSP includes at least one of the four ~~sHSP~~ HSPs selected from the group consisting of inclusion body-associated protein A, inclusion body-associated protein B, inclusion body-associated protein AB, and heat shock protein 26.

4. (Currently amended) A gel electrophoresis sample composition for use in 2-D gel electrophoresis, wherein said composition is resistant to protein degradation, said composition comprising protein that is susceptible to degradation by protease, with protease being present in the sample composition, and with the sample composition containing small heat shock protein (sHSP) in an amount in a range of from 0.1 to 50 parts, relative to 100 parts by weight of total protein in said sample composition ~~an effective amount of sHSPs small heat shock protein (sHSP)~~, wherein said sHSP includes at least one of the forty-one sHSPs ~~sHSP~~ selected from the group consisting of:
IbpA(inclusion body-associated protein A) derived from *Agrobacterium tumefaciens*;
sHSPs derived from *Arabidopsis thaliana*;
HspB (heat shock protein B), HspH (heat shock protein H), HspC (heat shock protein C) and HspF (heat shock protein F) derived from *Bradyrbizobium japonicum*;
IbpA derived from *Brucella suis*;

sHPs derived from *Buchnera aphidicola*;

IbpA derived from *Buchnera aphidicola* str. APS (*Acyrthosiphon pisum*);

sHSPs derived from *Citrus tristeza* virus;

IbpA and IbpB (inclusion body-associated protein B) derived from *Escherichia coli*;

IbpB derived from *Helicobacter pylori*;

Hsp27 and α,β-crystallin derived from Human;

Hsp16.5 derived from *Methanococcus jannaschii*;

IbpA derived from *Methanopyrus kandleri*;

Hsp25 derived from Murine;

sHSPs derived from *Mycobacterium leprae*;

Hsp16.3 derived from *Mycobacterium tuberculosis*;

IbpB derived from *Pirellula sp.*;

Hsp18.1 derived from *Pisum sativum*(pea);

sHSPs derived from *Plasmodium falciparum*;

IbpA derived from *Pseudomonas aeruginosa*;

IbpA derived from *Pseudomonas putida*;

Hsp26 derived from *Saccharomyces cerevisiae*;

IbpA and IbpB derived from *Salmonella enterica*;

IbpA and IbpB derived from *Salmonella typhimurium*;

IbpA derived from *Shewanella oneidensis*;

IbpA and IbpB derived from *Shigella flexneri*;

IbpA derived from *Sinorhizobium meliloti*;

IbpA derived from *Streptococcus pyogenes*;

sHSPs derived from *Streptomyces coelicolor*;

sHSPs derived from *Sulfolobus solfataricus*;

Hsp16 derived from *Synechococcus vulcanus*;

IbpA derived from *Thermoanaerobacter tengcongensis*;

IbpA derived from *Thermoplasma acidophilum*; and

sHSPs IbpA and IbpB derived from *Yersinia pestis*.

5. (Canceled)

6. (Currently amended) The composition according to claim 4, wherein said sHSP includes at least one of the four sHSPs ~~sHSP~~ selected from the group consisting of IbpA, IbpB, IbpAB and HSP26.

7. (Currently amended) A method for the 2-D gel electrophoresis of a ~~mixture~~ gel electrophoresis sample composition comprising protein that is susceptible to degradation by protease, with protease being present in the sample composition ~~a combination of different proteins~~, said method comprising:

adding ~~at least one~~ small heat shock protein (sHSP) to the ~~mixture~~ sample composition in an amount in a range of from 0.1 to 50 parts, relative to 100 parts by weight of total protein in said sample composition, so as to prevent protein degradation and obtain a gel with an at least 50% increased number of spots as compared to a gel obtained for a corresponding ~~mixture~~ sample composition lacking said at least one small heat shock protein, wherein said sHSP includes at least one of the forty one ~~sHSP~~ HSPs ~~is~~ selected from the group consisting of:

IbpA(inclusion body-associated protein A) derived from *Agrobacterium tumefaciens*;

sHSPs derived from *Arabidopsis thaliana*;

HspB (heat shock protein B), HspH (heat shock protein H), HspC (heat shock protein C) and HspF (heat shock protein F) derived from *Bradyrbizobium japonicum*;

IbpA derived from *Brucella suis*;

sHPs derived from *Buchnera aphidicola*;

IbpA derived from *Buchnera aphidicola* str. APS (*Acyrthosiphon pisum*);

sHSPs derived from *Citrus tristeza* virus;

IbpA and IbpB (inclusion body-associated protein B) derived from *Escherichia coli*;

IbpB derived from *Helicobacter pylori*;

Hsp27 and α,β-crystallin derived from Human;

Hsp16.5 derived from *Methanococcus jannaschii*;

IbpA derived from *Methanopyrus kandleri*;

Hsp25 derived from Murine;

sHSPs derived from *Mycobacterium leprae*;

Hsp16.3 derived from *Mycobacterium tuberculosis*;

IbpB derived from *Pirellula sp.*;

Hsp18.1 derived from *Pisum sativum*(pea);

sHSPs derived from *Plasmodium falciparum*;
IbpA derived from *Pseudomonas aeruginosa*;
IbpA derived from *Pseudomonas putida*;
Hsp26 derived from *Saccharomyces cerevisiae*;
IbpA and IbpB derived from *Salmonella enterica*;
IbpA and IbpB derived from *Salmonella typhimurium*;
IbpA derived from *Shewanella oneidensis*;
IbpA and IbpB derived from *Shigella flexneri*;
IbpA derived from *Sinorhizobium meliloti*;
IbpA derived from *Streptococcus pyogenes*;
sHSPs derived from *Streptomyces coelicolor*;
sHSPs derived from *Sulfolobus solfataricus*;
Hsp16 derived from *Synechococcus vulcanus*;
IbpA derived from *Thermoanaerobacter tengcongensis*;
IbpA derived from *Thermoplasma acidophilum*; and
sHSPs IbpA and IbpB derived from *Yersinia pestis*; and

subjecting the ~~mixture~~ composition comprising said at least one small heat shock protein to 2-D gel electrophoresis.

8. (Canceled)

9. (Currently amended) A method for the 2-D gel electrophoresis of a ~~mixture~~ gel electrophoresis sample composition comprising protein that is susceptible to degradation by protease, with protease being present in the sample composition ~~a combination of different proteins~~, which comprises:

adding small heat shock protein (sHSP) to the ~~mixture~~ sample composition, so as to prevent protein degradation and obtain a gel with an at least 50% increased number of spots as compared to a gel of a corresponding ~~mixture~~ sample composition lacking added sHSP; and

subjecting the ~~mixture~~ sample composition comprising the added sHSP to 2-D gel electrophoresis,

wherein the added sHSP comprises at least one of the five ~~sHSP~~ HSPs selected from the group consisting of inclusion body-associated protein A (IbpA), inclusion body-associated protein B

(IbpB) and inclusion body-associated protein AB (IbpAB) derived from *E. coli*, inclusion body-associated protein A (IbpA) derived from *Pseudomonas* and heat shock protein 26 (HSP26) derived from *Saccharomyces cerevisiae*.

10. (Previously Presented) The method according to claim 7, wherein the amount of the at least one sHSP that is added is in a range of 0.1 to 50 parts, relative to 100 parts by weight of the total protein of an electrophoresis sample.

11. (Previously Presented) The method according to claim 10, wherein the amount of the at least one sHSP that is added is 0.5 to 20 parts, relative to 100 parts by weight of the total protein.

12. (Canceled)

13. (Currently Amended) The method according to claim [[12]] 7, wherein said composition comprises ~~the specific~~ cells ~~are~~ of prokaryotes or eukaryotes.

14. (Original) The method according to claim 13, wherein the prokaryotes are *E. coli* or *Pseudomonas* sp. microorganisms, and the eukaryotes are human-derived cells.

15. (Original) A method for the analysis of proteomes by 2-D gel electrophoresis, which is characterized by using the composition of claim 1.

16. (Canceled)

17. (Canceled)

18. (Currently amended) A method for the 2-D gel electrophoresis of a ~~mixture comprising a combination of different proteins~~ sample composition comprising protein that is susceptible to degradation by protease, with protease being present in the sample composition,, which comprises:

adding small heat shock protein (sHSP) to the ~~mixture~~ sample composition, so as to prevent protein degradation and obtain a gel with an at least 50% increased number of spots as compared to a gel of a corresponding ~~mixture~~ sample composition lacking added sHSP; and

subjecting the mixture comprising the added sHSP to 2-D gel electrophoresis,

wherein the added sHSP comprises ~~at least one~~ small heat shock protein (sHSP) derived from an organism selected from the group consisting of *Agrobacterium tumefaciens* str. C58 (U. Washington), *Arabidopsis thaliana Bradyrbizobium japonicum, Brucella suis* 1330, *Buchnera aphidicola* plasmid pBPS1, *Buchnera aphidicola* str. APS (*Acyrthosiphon pisum*), *Citrus tristeza* virus, *Escherichia coli* CFT073, *Escherichia coli* K12, *Escherichia coli* O157:H7 EDL933, *Escherichia coli* O157:H7, *Helicobacter pylori* 26695, Human, *Methanococcus jannaschii,* Murine, *Mycobacterium leprae* strain TN, *Mycobacterium tuberculosis, Pirellula sp., Pisum sativum*(pea), *Plasmodium falciparum* 3D7, *Pseudomonas aeruginosa* PA01, *Pseudomonas putida* KT2440, *Saccharomyces cerevisiae, Salmonella enterica subsp. enterica serovar Typhi Salmonella typhimurium* LT2, *Shewanella oneidensis* MR-1, *Shigella flexneri* 2a str. 2457T, *Shigella flexneri* 2a str. 301, *Sinorhizobium meliloti* 1021, *Sinorhizobium meliloti* plasmid pSymA, *Streptococcus pyogenes, Streptomyces coelicolor* A3(2), *Sulfolobus solfataricus, Synechococcus vulcanus, Thermoanaerobacter tengcongensis* strain MB4T, *Thermoplasma acidophilum, Yersinia pestis* KIM, and *Yersinia pestis* strain CO92.